

Application No. 10/033,809
Amendment Dated: March 21, 2005
Reply to the Final Office Action of January 27, 2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 1. (Twice Amended) A computer-implemented method for bypassing I/O operations of a file
2 system included in said computer, said computer having a computer program application that
3 includes ordered computer code, said ordered code including I/O access commands, said file
4 system that is optimized for processing queued said I/O access commands, and said computer
5 system having application programming interfaces and a shell interface that enable bypassing
6 said I/O operations, the method comprising:

7 ~~identifying said file system as a general purpose file system;~~

8 locating asynchronous direct said I/O access commands that are included in said

9 application ordered computer code; and

10 bypassing said ~~general-purpose~~ file system by executing said asynchronous direct I/O

11 access commands by use of said application programming interfaces and said

12 shell interface ~~a different file system.~~

1 2. (Original) The computer-implemented method of Claim 1, further comprising:

2 including an operating system in said computer; and

bypassing said queued I/O access commands when porting said application from said
operating system to a different said operating system.

3. (Twice Amended) The computer-implemented method of Claim 1, further comprising
bypassing said ~~general-purpose~~ file system by use of a performance file ~~that is included in said~~
~~different file system.~~

4. (Twice Amended) A computer-implemented method for aggregating asynchronous direct I/O
access commands, said computer having a computer program application that does application
I/O caching and includes ordered computer code, said each ordered computer code having at
least one said asynchronous direct I/O access command that operates with said application I/O
caching, said computer supporting I/O request chaining, said computer having a file system that
locates storage space for said computer code on said disk, said computer that executes said
computer program application, the method comprising:

locating said at least one asynchronous direct I/O access command;

associating said at least one asynchronous direct I/O access command with at least one

~~general-purpose~~ file in said file system;

associating said at least one ~~general-purpose~~ file with at least one performance file;

chaining said asynchronous direct I/O access command into at least one aggregated I/O

access command in said computer program application;

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14 associating said at least one aggregated I/O access command with said at least one
15 performance file;
16 identifying a terminus point ~~that is ordered~~ in said ordered computer code;
17 issuing said at least one aggregated I/O command until said terminus point is reached;
18 and
19 when said terminus point is reached and if said at least one aggregated I/O command
20 remains, issuing a final said at least one aggregated I/O access command.

1 5. (Original) The computer-implemented method of Claim 4, further comprising:
2 including data in said at least one asynchronous direct I/O access command; and
3 including said data in said at least one aggregated I/O access command.

1 6. (Previously Amended) The computer-implemented method of Claim 4, further comprising
2 allocating said performance file in single extents.

1 7. (Previously Amended) The computer-implemented method of Claim 4, further comprising
2 pre-formatting said performance file.

1 8. (Previously Amended) The computer-implemented method of Claim 4, further comprising
2 allocating said performance file in a named performance file pool.

1 9. (Previously Amended) The computer-implemented method of Claim 8, further comprising
2 marking said performance file in said performance file pool as free.

1 10. (Previously Amended) The computer-implemented method of Claim 8, further comprising
2 marking said performance file in said performance file pool as used.

1 11. (Previously Amended) The computer-implemented method of Claim 4, further comprising
2 allocating said performance file in a default performance file pool.

1 12. (Previously Amended) The computer-implemented method of Claim 11, further comprising
2 marking said performance file in said default performance file pool as free.

1 13. (Previously Amended) The computer-implemented method of Claim 11, further comprising
2 marking said performance file in said default performance file pool as used.

1 14. (Previously Amended) The computer-implemented method of Claim 4, further comprising
2 manipulating said performance file by a file pool utility.

1 15. (Original) The computer-implemented method of Claim 4, further comprising recovering

from errors occurring while executing said at least one aggregated I/O access command.

16.(Original) The computer-implemented method of Claim 4, further comprising locating said at least one asynchronous direct I/O access command in a loop in said ordered computer code.

17. (Twice Amended) A computer system for bypassing I/O operations of a file system included in said computer system, said computer system having a computer program application that includes ordered computer code, said ordered code including I/O access commands, said file system that is optimized for processing queued said I/O access commands, and said computer system having application programming interfaces and a shell interface that enable bypassing said I/O operations, comprising:

~~said file system as a general-purpose file system;~~

asynchronous direct said I/O access commands that are included in said application ordered computer code; and

said ~~general purpose~~ file system that is bypassed by executing said asynchronous direct I/O access commands by use of said application programming interfaces and said shell interface ~~a different file system.~~

18. (Original) The computer system of Claim 17, further comprising:

an operating system in said computer; and

3 said queued I/O access commands that are bypassed when porting said application from said
4 operating system to a different said operating system.

1 19. (Twice Amended) The computer system of Claim 17, further comprising said ~~general~~
2 ~~purpose~~ file system that is bypassed by use of a performance file ~~that is included in said different~~
3 ~~file system.~~

1 20. (Twice Amended) A computer system for aggregating asynchronous direct I/O access
2 commands, said computer having a computer program application that does application I/O
3 caching and includes ordered computer code, said each ordered computer code having at least
4 one said asynchronous direct I/O access command that operates with said application I/O
5 caching, said computer supporting I/O request chaining, said computer having a file system that
6 locates storage space for said computer code on said disk, said computer that executes said
7 computer program application, comprising:

8 said at least one asynchronous direct I/O access command;

9 said at least one asynchronous direct I/O access command that is associated with at least one

10 ~~general purpose~~ file in said file system;

11 said at least one ~~general purpose~~ file that is associated with at least one performance file;

12 said asynchronous direct I/O access command that is chained into at least one aggregated I/O

13 access command in said computer program application;

14 said at least one aggregated I/O access command that is associated with said at least one
15 performance file;
16 a terminus point ~~that is ordered~~ in said ordered computer code;
17 said at least one aggregated I/O command that is issued until said terminus point is reached;
18 and
19 when said terminus point is reached and if said at least one aggregated I/O command
20 remains, a final said at least one aggregated I/O access command that is issued.

1 21. (Original) The computer system of Claim 20, further comprising:
2 data that is included in said at least one asynchronous direct I/O access command; and
3 said data that is included in said at least one aggregated I/O access command.

1 22. (Previously Amended) The computer system of Claim 20, further comprising said
2 performance file that is allocated in single extents.

1 23. (Previously Amended) The computer system of Claim 20, further comprising said
2 performance file that is a pre-formatted file.

1 24. (Previously Amended) The computer system of Claim 20, further comprising said
2 performance file that is allocated in a named performance file pool.

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1 25. (Previously Amended) The computer system of Claim 24, further comprising said
2 performance file that is marked in said named performance file pool as free.

1 26. (Previously Amended) The computer system of Claim 24, further comprising said
2 performance file that is marked in said named performance file pool as used.

1 27. (Previously Amended)) The computer system of Claim 20, further comprising said
2 performance file that is allocated in a default performance file pool.

1 28. (Previously Amended) The computer system of Claim 27, further comprising said -
2 performance file that is marked in said default performance file pool as free.

1 29. (Previously Amended) The computer system of Claim 27, further comprising said
2 performance file that is marked in said default performance file pool as used.

1 30.(Previously Amended) The computer system of Claim 20, further comprising said
2 performance file that is manipulated by a file pool utility.

1 31. (Original) The computer system of Claim 20, further comprising said executing at least one

aggregated I/O access command that recovers from errors.

32.(Original) The computer system of Claim 20, further comprising said at least one asynchronous direct I/O access command that is located in a loop in said ordered computer code.

33. (Twice Amended) An article of manufacture comprising a program storage medium readable by a computer and embodying one or more instructions executable by said computer for bypassing I/O operations of a file system included in said computer, said computer having a computer program application that includes ordered computer code, said ordered code including I/O access commands, said file system that is optimized for processing queued said I/O access commands, and said computer system having application programming interfaces and a shell interface that enable bypassing said I/O operations, wherein:

~~computer-readable program code identifies said file system as a general-purpose file system;~~

computer-readable program code locates asynchronous direct said I/O access commands that are included in said application ordered computer code; and

computer-readable program code bypasses said ~~general-purpose~~ file system by executing said asynchronous direct I/O access commands by use of said application programming interfaces and said shell interface ~~a different file system~~.

1 34.(Original) The article of manufacture of Claim 33, wherein:

2 computer-readable program code includes an operating system in said computer; and

3 computer-readable program code bypasses said queued I/O access commands when

4 porting said application to a different said operating system.

1 35.(Twice Amended) The article of manufacture of Claim 34, wherein computer-readable

2 program code bypasses said ~~general purpose~~ file system by use of a performance file that is

3 ~~included in said different file system.~~

1 36. (Twice Amended) An article of manufacture comprising a program storage medium readable

2 by a computer and embodying one or more instructions executable by said computer for

3 aggregating asynchronous direct I/O access commands, said computer having a computer

4 program application that does application I/O caching and includes ordered computer code, said

5 each ordered computer code having at least one said asynchronous direct I/O access command

6 that operates with said application I/O caching, said computer supporting I/O request chaining,

7 said computer having a file system that locates storage space for said computer code on said disk,

8 said computer that executes said computer program application, wherein:

9 computer-readable program code locates said at least one asynchronous direct I/O access

10 command;

11 computer-readable program code associates said at least one asynchronous direct I/O
12 access command with at least one ~~general-purpose~~ file in said file system;
13 computer-readable program code associates said at least one general-purpose file with at
14 least one performance file;
15 computer-readable program code chains said asynchronous direct I/O access command
16 into at least one aggregated I/O access command in said computer program
17 application;
18 computer-readable program code associates said at least one aggregated I/O access
19 command with said at least one performance file;
20 computer-readable program code identifies a terminus point ~~that is ordered~~ in said
21 ordered computer code;
22 computer-readable program code issues said at least one aggregated I/O command until
23 said terminus point is reached; and
24 when said terminus point is reached and if said at least one aggregated I/O command
25 remains, computer-readable program code issues a final said at least one
26 aggregated I/O access command.

1 37.(Original) The article of manufacture of Claim 36, wherein computer-readable program code
2 locates said at least one asynchronous direct I/O access command in a loop in said ordered
3 computer code.